REMARKS/ARGUMENTS

Brief Summary of Status

Claims 1-15 and 31-45 are pending in the application.

Claims 1-15 and 31-45 are rejected.

35 U.S.C. § 101

In the above-referenced office action, the Examiner asserts the following:

"2. Claims 36-37, 39-43 and 45 are rejected under 35 U.S.C. 101." (office action, Part of Paper No./Mail Date 20090424, p. 2)

The Applicant respectfully traverses.

The Applicant has amended independent claims 36 and 41.

The Applicant respectfully asserts the particular recitation of embodiments of various apparatus, such as a transmitter and receiver, are in fact tied to an appropriate statutory category. In other words, at least one of the steps is tied to an apparatus.

As such, the Applicant respectfully requests that the Examiner withdraw these rejections.

35 U.S.C. § 103

In the above-referenced office action, the Examiner asserts the following:

"4. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ertel et al (US 7,031,290 B2) in view of Ariyoshi et al (US Patent 5,930,244) in view of Rakib et al (US Patent 6,356,555 B1). Hereinafter referred as Ertel, Ariyoshi and Rakib." (office action, Part of Paper No./Mail Date 20090424, p. 3)

The Applicant respectfully traverses.

With respect to the rejection of independent claims 1 and 6, the Examiner asserts that Ertel teaches and discloses "the channel termination system spreads each of the channel user signal using an orthogonal code to generate a plurality of orthogonal code spread channel user signal (column 1, lines 51-54)". (office action, Part of Paper No./Mail Date 20090424, pp. 2-3, emphasis added)

The Applicant respectfully points out that this is the identical language the Examiner employed in the rejections within the final office action (Part of Paper No./Mail Date 20080820, p. 3) before the Applicant's amendments to independent claims 1 and 6 as submitted in the Applicant's response/RCE filed on 02-17-2009 (EFS ID# 4809706).

The Applicant respectfully asserts that the Applicant does not claim "the channel termination system spreads each of the channel user signal using an orthogonal code to generate a plurality of orthogonal code spread channel user signal" in independent claims 1 and 6.

In contradistinction, the Applicant claims subject matter, including other subject matter limitations, "the cable modem termination system spreads each of the cable modem user signals using one corresponding orthogonal code of a plurality of orthogonal codes to generate a plurality of orthogonal code spread cable modem user signals" (independent claim 1) and "each of the plurality of cable modems spreads its respective cable modem user signal using its respective orthogonal code of a plurality of orthogonal codes to generate its respective orthogonal code spread cable modem user signal" (independent claim 6).

As can be seen, each respective cable modem user signal is spread using a different orthogonal code. In independent claim 1, each of the cable modem user signals is spread using one corresponding orthogonal code of a plurality of orthogonal codes; one corresponding orthogonal code corresponds to each respective cable modem. In independent claim 6, each of the plurality of cable modems spreads its respective cable modem user signal using its respective orthogonal code; each corresponding orthogonal code corresponds to one respective cable modem.

Ertel not only fails to teach and disclose this subject matter, but Ertel particularly teaches away from such subject matter, in that, Ertel teaches and discloses the use of an "identical code", "same code", etc. across multiple users or a set of users. Ertel is full of this consistent teaching and disclosure that employs an "identical code", "same code", etc. across multiple users or a set of users.

For the convenience of the Examiner, many of these examples are provided below from Ertel (and this listing of examples only shows some, not all, of such instances):

Ertel teaches and discloses:

"…users that are assigned an identical spreading code. Therefore, when assigning codes to new users, care is taken to insure that the set of users that are assigned an identical code are spatially compatible. A good code assignment scheme in accordance with these teachings assigns identical codes to users having most dissimilar spatial properties.

…

… algorithm attempts to assign identical code sequences to users (sic) having the most different spatial properties with respect to one another." (Ertel, col. 1, lines 51-65, emphasis added)

"… spatially isolate same code SSs 10 in the cell. The number of times that a code may be reused within a same cell is dependent upon … " (Ertel, col. 10, lines 25-27, emphasis added)

"… the code reuse is ..." (Ertel, col. 10, lines 33, emphasis added)

"… it is possible to achieve a code resuse of 0.9M of better." (Ertel, col. 10, lines 38, emphasis added)

"… assuming a code reuse equal to the number of antenna elements." (Ertel, col. 10, lines 47-48, emphasis added)

"… the two users are able to access the RBU 11 resources using the same frequency, at the same time, and with the same spreading code, without interfering with one another." (Ertel, col. 13, lines 9-12, emphasis added)

"… the users that share any given code …" (Ertel, col. 13, lines 44-45, emphasis added)

"… the same code users' SSV …" (Ertel, col. 14, line 31, emphasis added)

"… output signal where there are N, users using code i. Assuming that the data of these same code users … " (Ertel, col. 14, lines 45-46, emphasis added)

"… where Sc denotes the set of users already assigned to code c." (Ertel, col. 15, lines 2-3, emphasis added)

"For the SS 10 that is transmitting on a shared PN code … the same code users … " (Ertel, col. 15, lines 20-22, emphasis added)

Ertel expressly directs the disclosure thereof to assign a common spreading code for use in spreading more than one signal. FIG. 9 also explicitly pictorially depicts using a same spreading code (e.g., $c_i(k)$) for use in spreading each of a number of signals.

This is contrary to the subject matter to which the Applicant's claimed subject matter is directed.

Unlike Ertel where an "identical code", "same code", etc. is employed to spread signals from multiple users or a set of users, the Applicant claims subject matter directed towards one corresponding orthogonal code is employed for use in spreading each respective cable modem user signal.

In Ertel's FIG. 9, the "branch summing node 60" sums the signals that have all been spread using the "identical code", "same code", etc. within the respective and multiple "code multiplier (despreader) 54".

The Applicant respectfully asserts that Ertel fails to teach and disclose the subject Applicant's claimed matter limitations.

The Applicant respectfully asserts that the inclusion of Ariyoshi and Rakib fail to cure the deficiencies of Ertel.

The Applicant respectfully asserts that Ertel, Ariyoshi, and Rakib, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully asserts that independent claims 1 and 6 are allowable over Ertel in view of Ariyoshi in view of Rakib.

In view of at least these comments made above, the Applicant respectfully believes that these independent claims rejected above are patentable over these cited references.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

"5. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ariyoshi et al (US Patent 5,930,244) in view of Rakib et al (US Patent 6,356,555 B1). Hereinafter referred as Ariyoshi and Rakib." (office action, Part of Paper No./Mail Date 20090424, p. 6)

The Applicant respectfully traverses.

On p. 7 of the office action, with respect to the rejection of independent claim 11, the Examiner asserts "However, Ariyoshi fails to teach each of the pseudo-noise spreader and the pseudo-noise de-spreader employs a same pseudo-noise code employed by all other cable modems. Rakib teaches on (column 73 lines 30-36) all RU and CU code diversity shufflers receive this same seed and all RUs having active timeslots and the CU operate synchronously to assign the same COMA code to the active timeslots so that the CU can recover the OCMA spread data transmitted by the RU using the same COMA code(s) that were used to spread it. Rakib also teaches that within the cable modem system in accordance with spreading respective cable modem user signals (column 103 lines 1-39) and de-spreading respective received pseudo-noise code spread cable modem user signals (column 103 lines 40-54)." (emphasis added).

The Applicant agrees, in that Ariyoshi explicitly teaches and discloses that each forward link uses a pseudo noise specific to that link, and each reverse link likewise uses a pseudo-noise (PN) code specific to that link. In other words, different links do not employ a same pseudo-noise code to perform spreading/de-spreading in accordance with Ariyoshi.

Ariyoshi also teaches and discloses:

"This spectrum spreading is performed in two steps by using pseudo noises PNf specific to each forward link generated by a pseudo noise (Tx-PN) generator 104 and by using an orthogonal code Wi specific to each terminal station generated by an orthogonal code generator 105. The signal modulated through spectrum spreading is output as a transmitting signal Tx-i (i=1 to n)." (Ariyoshi, col. 4, lines 50-57, emphasis added)

As can be seen in accordance with the teaching and disclosure of Ariyoshi, there is no singular, pseudo-noise code employed by each of a number of devices. Rather, "pseudo noises PNr specific to each reverse link" and "pseudo noises PNf specific to each forward link" are employed. In other words, two different links (and consequently

two different devices on each of the two different links) would employ different "pseudo noises" specific to each respective link in accordance with Ariyoshi.

This teaching and disclosure of Ariyoshi teaches away from the subject matter as claimed by the Applicant in which a singular, pseudo-noise (PN) code is employed by each cable modem.

On page 7 of the office action, the Examiner characterizes Rakib's "**(column 73 lines 30-36)**" as having teaching and disclosure directed to all RUs (cable modems) using the same pseudo-noise (PN) code.

However, this portion of Rakib actually teaches and discloses:

"All RU and CU code diversity shufflers receive this same seed and all RUs having active timeslots and the CU operate synchronously to assign the same CDMA code to the active timeslots so that the CU can recover the CDMA spread data transmitted by the RU using the same CDMA code(s) that were used to spread it. The pseudorandom number generated in this manner is output on bus 734 as an address into a code status table stored in random access memory 736, and is also stored in FIFO memory 742 for later output as a writer pointer on bus 533." (Rakib, col. 73, lines 30-40, emphasis added)

The Applicant respectfully points out that this portion of Rakib does not deal with any pseudo-noise (PN) code related content in accordance with the subject matter as claimed by the Applicant, but deals instead with maintaining code diversity among multiple RUs and a CU in accordance with the shuffling related functionality therein.

The Applicant respectfully asserts that one having skill in the art would understand the distinction and difference between pseudo-noise (PN) code related subject matter that Applicant claims and the "pseudorandom number" generation in Rakib's "**(column 73 lines 30-36)**". Rakib's "pseudorandom number" generation is a mathematical means by which an "address" is generated and put into a "code status table stored in random access memory 736".

However, there is no mention of a pseudo-noise (PN) code in Rakib's "**(column 73 lines 30-36)**".

In contradistinction, Rakib's "**(column 73 lines 30-36)**" deals with orthogonal code assignment (and these orthogonal codes not being referred to at all as pseudo-noise (PN)) in accordance with code diversity/shuffling.

However, Rakib does in fact deal pseudo-noise (PN) code related subject matter in col. 2 and col. 3 therein, but this is unrelated to the code diversity/shuffling related subject matter of Rakib's "**(column 73 lines 30-36)**".

Rakib teaches and discloses:

"Also, as is known in the art all CDMA systems require clock recovery synchronization so that the pseudonoise code (hereafter PN code) sequence fed into the despreading circuitry is not only identical to the PN code fed into the spreading circuitry of the transmitter, but also exactly in phase therewith." (Rakib, col. 2, lines 34-39, emphasis added)

"The transmission of data is accomplished on a one user per timeslot basis using a pseudonoise spreading code. No teaching of the use of orthogonal codes is present in U.S. Pat. No. 4,912,721." (Rakib, col. 3, lines 2-5, emphasis added)

"In this system multiple users of a cellular telephone systems are supported by a direct-sequence spread spectrum system which minimizes interference between users by providing orthogonal PN codes for spreading and controlling transmit timing such that the code frames from different users are aligned in time with each other at the receivers." (Rakib, col. 3, lines 13-20, emphasis added)

"When a call is initiated, a PN code is assigned for the call.

…

During the call, pilot signals are continuously scanned to determined when another pilot signal becomes stronger. An outer PN code is used to spread all signals in the same cell to distinguish signals from other cells and multipath signals. A second inner code is used to distinguish between signals of different users in the same cell. The inner code is a maximal length PN code which is shifted in time for each user to provide discrimination among users." (Rakib, col. 3, lines 32-40, emphasis added)

The PN code related subject matter in Rakib actually teaches and discloses using a very same, first PN code as an outer PN code and a very same, second PN code as an

inner PN code (with time-shifting to provide "discrimination among users") for all devices in the communication system.

Again, the Examiner's characterization of Rakib's "**(column 73 lines 30-36)**" is directed to all RUs (cable modems) using the same code (note: Rakib's "**(column 73 lines 30-36)**" deals with "pseudorandom number" generation, and does not mention of a pseudo-noise (PN) code).

Therefore, it would appear that Rakib teaches and discloses employing a same code for all devices in the communication system, whether that code be a PN code or an orthogonal code.

Rakib's teaching and disclosure is contrary to the subject matter claims by the Applicant, in that, while a same PN code is employed by all cable modems within the cable modem system and different orthogonal codes are employed by each of the cable modems within the cable modem system. This is a combination of one type of code (PN code) for all cable modems within the cable modem system and also different orthogonal codes for each of the cable modems within the cable modem system.

With respect to Ariyoshi, Ariyoshi explicitly teaches and discloses that each forward link uses a pseudo noise specific to that link, and each reverse link likewise uses a pseudo-noise (PN) code specific to that link. In other words, different links do not employ a same pseudo-noise code to perform spreading/de-spreading in accordance with Ariyoshi.

Again, the Applicant agrees with the Examiner, in that "Ariyoshi fails to teach each of the pseudo-noise spreader and the pseudo-noise de-spreader employs a same pseudo-noise code employed by all other cable modems".

However, it is inappropriate to combine Ariyoshi (that teaches using different "pseudo noises" specific to each respective link) with Rakib (that teaches employing a same code for all devices in the communication system, whether that code be a PN code or an orthogonal code).

The Applicant respectfully asserts that Ariyoshi and Rakib fail to teach and disclose the subject Applicant's claimed matter limitations in independent claim 1.

The Applicant respectfully asserts that Ariyoshi and Rakib, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully asserts that independent claim 11 is allowable over Ariyoshi and Rakib.

In view of at least these comments made above, the Applicant respectfully believes that this independent claim rejected above is patentable over these cited references.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in an allowable independent claim, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

"6. Claims 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rakib et al (US Patent 6,356,555 B1) in view of Ariyoshi et al (US Patent 5,930,244). Hereinafter referred as Rakib and Ariyoshi." (office action, Part of Paper No./Mail Date 20090424, p. 8)

The Applicant respectfully traverses.

On pp. 8-9 of the office action, with respect to the rejection of independent claim 31, the Examiner asserts that Rakib teaches and discloses "Each of the plurality of cable modems employs its respective pseudo-noise de-spreader, that operates using a pseudo-noise code that is common to all of the plurality of cable modems Rakib teaches on **(column 73 lines 30-36)** …" (emphasis added).

On page 9 of the office action, the Examiner characterizes Rakib's "**(column 73 lines 30-36)**" as having teaching and disclosure directed to all RUs (cable modems) using the same code.

However, this portion of Rakib actually teaches and discloses:

"All RU and CU code diversity shufflers receive this same seed and all RUs having active timeslots and the CU operate synchronously to assign the same CDMA code to the active timeslots so that the CU can recover the CDMA spread data

transmitted by the RU using the same CDMA code(s) that were used to spread it. The pseudorandom number generated in this manner is output on bus 734 as an address into a code status table stored in random access memory 736, and is also stored in FIFO memory 742 for later output as a writer pointer on bus 533." (Rakib, col. 73, lines 30-40, emphasis added)

The Applicant respectfully points out that this portion of Rakib does not deal with any pseudo-noise (PN) code related content in accordance with the subject matter as claimed by the Applicant, but deals instead with maintaining code diversity among multiple RUs and a CU in accordance with the shuffling related functionality therein.

The Applicant respectfully asserts that one having skill in the art would understand the distinction and difference between pseudo-noise (PN) code related subject matter that Applicant claims and the "pseudorandom number" generation in Rakib's "**(column 73 lines 30-36)**". Rakib's "pseudorandom number" generation is a mathematical means by which an "address" is generated and put into a "code status table stored in random access memory 736".

However, there is no mention of a pseudo-noise (PN) code in Rakib's "**(column 73 lines 30-36)**".

In contradistinction, Rakib's "**(column 73 lines 30-36)**" deals with orthogonal code assignment (and these orthogonal codes not being referred to at all as pseudo-noise (PN)) in accordance with code diversity/shuffling.

However, Rakib does in fact deal pseudo-noise (PN) code related subject matter in col. 2 and col. 3 therein, but this is unrelated to the code diversity/shuffling related subject matter of Rakib's "**(column 73 lines 30-36)**".

Rakib teaches and discloses:

"Also, as is known in the art all CDMA systems require clock recovery synchronization so that the pseudonoise code (hereafter PN code) sequence fed into the despreading circuitry is not only identical to the PN code fed into the spreading circuitry of the transmitter, but also exactly in phase therewith." (Rakib, col. 2, lines 34-39, emphasis added)

"The transmission of data is accomplished on a one user per timeslot basis using a pseudonoise spreading code. No teaching of the use of orthogonal codes is present in U.S. Pat. No. 4,912,721." (Rakib, col. 3, lines 2-5, emphasis added)

"In this system multiple users of a cellular telephone systems are supported by a direct-sequence spread spectrum system which minimizes interference between users by providing orthogonal PN codes for spreading and controlling transmit timing such that the code frames from different users are aligned in time with each other at the receivers." (Rakib, col. 3, lines 13-20, emphasis added)

"When a call is initiated, a PN code is assigned for the call.

…

During the call, pilot signals are continuously scanned to determined when another pilot signal becomes stronger. An outer PN code is used to spread all signals in the same cell to distinguish signals from other cells and multipath signals. A second inner code is used to distinguish between signals of different users in the same cell. The inner code is a maximal length PN code which is shifted in time for each user to provide discrimination among users." (Rakib, col. 3, lines 32-40, emphasis added)

The PN code related subject matter in Rakib actually teaches and discloses using a very same, first PN code as an outer PN code and a very same, second PN code as an inner PN code (with time-shifting to provide "discrimination among users") for all devices in the communication system.

Again, the Examiner's characterization of Rakib's "**(column 73 lines 30-36)**" is directed to all RUs (cable modems) using the same code (note: Rakib's "**(column 73 lines 30-36)**" deals with "pseudorandom number" generation, and does not mention of a pseudo-noise (PN) code).

Therefore, it would appear that Rakib teaches and discloses employing a same code for all devices in the communication system, whether that code be a PN code or an orthogonal code.

Rakib's teaching and disclosure is contrary to the subject matter claims by the Applicant, in that, while a same PN code is employed by all cable modems within the cable modem system and different orthogonal codes are employed by each of the cable modems within the cable modem system. This is a combination of one type of code (PN

code) for all cable modems within the cable modem system and different orthogonal codes for each of the cable modems within the cable modem system.

With respect to Ariyoshi, Ariyoshi explicitly teaches and discloses that each forward link uses a pseudo noise specific to that link, and each reverse link likewise uses a pseudo-noise (PN) code specific to that link. In other words, different links do not employ a same pseudo-noise code to perform spreading/de-spreading in accordance with Ariyoshi.

Ariyoshi also teaches and discloses:

"This spectrum spreading is performed in two steps by using pseudo noises PNf specific to each forward link generated by a pseudo noise (Tx-PN) generator 104 and by using an orthogonal code Wi specific to each terminal station generated by an orthogonal code generator 105. The signal modulated through spectrum spreading is output as a transmitting signal Tx-i (i=1 to n)." (Ariyoshi, col. 4, lines 50-57, emphasis added)

As can be seen in accordance with the teaching and disclosure of Ariyoshi, there is no singular, pseudo-noise code employed by each of a number of devices. Rather, "pseudo noises PNr specific to each reverse link" and "pseudo noises PNf specific to each forward link" are employed. In other words, two different links (and consequently two different devices on each of the two different links) would employ different "pseudo noises" specific to each respective link in accordance with Ariyoshi.

This teaching and disclosure of Ariyoshi teaches away from the subject matter as claimed by the Applicant in which a singular, pseudo-noise (PN) code is employed by each cable modem.

Moreover, it is inappropriate to combine Ariyoshi (that teaches using different "pseudo noises" specific to each respective link) with Rakib (that teaches employing a same code for all devices in the communication system, whether that code be a PN code or an orthogonal code).

The Applicant respectfully asserts that Ariyoshi and Rakib fail to teach and disclose the subject Applicant's claimed matter limitations in independent claim 31.

The Applicant respectfully asserts that Ariyoshi and Rakib, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully asserts that independent claim 31 is allowable over Ariyoshi and Rakib.

In view of at least these comments made above, the Applicant respectfully believes that this independent claim rejected above is patentable over these cited references.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in an allowable independent claim, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

"7. Claims 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rakib et al (US Patent 6,356,555 B1) in view of Ariyoshi et al (US Patent 5,930,244). Hereinafter referred as Rakib and Ariyoshi." (office action, Part of Paper No./Mail Date 20090424, p. 12)

The Applicant respectfully traverses.

On page 12, with respect to the rejection of independent claim 36, the Examiner asserts that "Ariyoshi teaches on **(figure 3)** a pseudo-noise generator. Ariyoshi also teaches transmitting the pseudo-noise code spread signal **(column 50 lines 17-21 Ariyoshi)** from a transmitter to a receiver of a plurality of receivers such that each orthogonal code of the plurality of orthogonal codes corresponds to one respective receiver of the plurality of receivers **(column 1 lines 42-55);**"

Ariyoshi explicitly teaches and discloses that each forward link uses a pseudo noise specific to that link, and each reverse link likewise uses a pseudo-noise (PN) code specific to that link. In other words, different links do not employ a same pseudo-noise code to perform spreading/de-spreading in accordance with Ariyoshi.

Ariyoshi also teaches and discloses:

"This spectrum spreading is performed in two steps by using pseudo noises PNf specific to each forward link generated by a pseudo noise (Tx-PN) generator 104 and by using an orthogonal code Wi specific to each terminal station generated by an orthogonal

code generator 105. The signal modulated through spectrum spreading is output as a transmitting signal Tx-i (i=1 to n)." (Ariyoshi, col. 4, lines 50-57, emphasis added)

As can be seen in accordance with the teaching and disclosure of Ariyoshi, there is no singular, pseudo-noise code employed by each of a number of devices. Rather, "pseudo noises PNr specific to each reverse link" and "pseudo noises PNf specific to each forward link" are employed. In other words, two different links (and consequently two different devices on each of the two different links) would employ different "pseudo noises" specific to each respective link in accordance with Ariyoshi.

This teaching and disclosure of Ariyoshi teaches away from the subject matter as claimed by the Applicant in which a singular, pseudo-noise (PN) code is employed for spreading a summed spread signal using a pseudo-noise code thereby generating a pseudo-noise code spread signal. In other words, multiple orthogonal code spread signals that are summed together to form a summed spread signal gets spread using a pseudo-noise code thereby generating a pseudo-noise code spread signal.

This teaching and disclosure of Ariyoshi teaches away from the subject matter as claimed by the Applicant in which a singular, pseudo-noise (PN) code is applied to a summed signal composed of multiple orthogonal code spread signals.

The Applicant respectfully asserts that Ariyoshi and Rakib fail to teach and disclose the subject Applicant's claimed matter limitations in independent claim 36.

The Applicant respectfully asserts that Ariyoshi and Rakib, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully asserts that independent claim 36 is allowable over Ariyoshi and Rakib.

In view of at least these comments made above, the Applicant respectfully believes that this independent claim rejected above is patentable over these cited references.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in an allowable independent claim, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

"8. Claims 41-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rakib et al (US Patent 6,356,555 B1) in view of Ariyoshi et al (US Patent 5,930,244). Hereinafter referred as Rakib and Ariyoshi." (office action, Part of Paper No./Mail Date 20090424, p. 14)

The Applicant respectfully traverses.

In the Examiner-cited Rakib's col. 47, lines 34-38 teaches and discloses that the "transition on line 374 acts as a count enable signal to byte counter 370 to enable incrementation of the byte counter 370 by the next bit clock cycle. This generates the byte counter signal on line 302. The bit counter 372 is always enabled by the hard wired count enable signal on line 376." (emphasis added)

The Applicant respectfully asserts that this "count enable signal to byte counter 370" is not an enable signal in accordance with the subject matter as claimed by the Applicant in independent claim 41, that includes among other subject matter limitations, selectively spreading the summed spread signal, based on the enable signal, using a pseudo-noise code thereby generating a pseudo-noise code spread signal; and from the transmitter, based on the enable signal, transmitting either the pseudo-noise code spread signal or the summed spread signal to a plurality of receivers such that each orthogonal code of the plurality of orthogonal codes corresponds to one respective receiver of the plurality of receivers. Note these steps are performed "based on the enable signal".

In contradistinction, Rakib's "count enable signal to byte counter 370" operates to "to enable incrementation of the byte counter 370 by the next bit clock cycle". This is not selectively spreading the summed spread signal and transmitting either the pseudo-noise code spread signal or the summed spread signal, based on the enable signal, in accordance with the subject matter as claimed by the Applicant.

On page 15, with respect to the rejection of independent claim 41, the Examiner asserts that "Ariyoshi teaches on **(figure 3)** a pseudo-noise generator. Ariyoshi also generates a pseudo-noise code spread signal **(column 50 lines 17-21);** and based on the enable signal, transmitting either the pseudo-noise code spread signal **(column 8 lines**

28-38) or the summed spread signal from a transmitter to a plurality of receivers such that each orthogonal code of the plurality of orthogonal codes **(column 9 lines 28-38)** corresponds to one respective receiver of the plurality of receivers **(column 1 lines 42-55).**" (emphasis added)

Ariyoshi explicitly teaches and discloses that each forward link uses a pseudo noise specific to that link, and each reverse link likewise uses a pseudo-noise (PN) code specific to that link. In other words, different links do not employ a same pseudo-noise code to perform spreading/de-spreading in accordance with Ariyoshi.

Ariyoshi also teaches and discloses:

"This spectrum spreading is performed in two steps by using pseudo noises PNf specific to each forward link generated by a pseudo noise (Tx-PN) generator 104 and by using an orthogonal code Wi specific to each terminal station generated by an orthogonal code generator 105. The signal modulated through spectrum spreading is output as a transmitting signal Tx-i (i=1 to n)." (Ariyoshi, col. 4, lines 50-57, emphasis added)

As can be seen in accordance with the teaching and disclosure of Ariyoshi, there is no singular, pseudo-noise code employed by each of a number of devices. Rather, "pseudo noises PNr specific to each reverse link" and "pseudo noises PNf specific to each forward link" are employed. In other words, two different links (and consequently two different devices on each of the two different links) would employ different "pseudo noises" specific to each respective link in accordance with Ariyoshi.

This teaching and disclosure of Ariyoshi teaches away from the subject matter as claimed by the Applicant in which a singular, pseudo-noise (PN) code is employed for selectively spreading a summed spread signal, based on the enable signal, using a pseudo-noise code thereby generating a pseudo-noise code spread signal. In other words, multiple orthogonal code spread signals that are summed together to form a summed spread signal undergoes selectively spreading using a pseudo-noise code thereby generating a pseudo-noise code spread signal.

This teaching and disclosure of Ariyoshi teaches away from the subject matter as claimed by the Applicant in which a singular, pseudo-noise (PN) code is applied to a summed signal composed of multiple orthogonal code spread signals.

The Applicant respectfully asserts that Ariyoshi and Rakib fail to teach and disclose the subject Applicant's claimed matter limitations in independent claim 41.

The Applicant respectfully asserts that Ariyoshi and Rakib, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully asserts that independent claim 41 is allowable over Ariyoshi and Rakib.

In view of at least these comments made above, the Applicant respectfully believes that this independent claim rejected above is patentable over these cited references.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in an allowable independent claim, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

The Applicant respectfully believes that the pending claims are in condition for allowance and respectfully requests that they be passed to allowance.

The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication would advance the prosecution of the present U.S. utility patent application.

RESPECTFULLY SUBMITTED,

By: /SXShort/ Reg. No. 45,105

Shayne X. Short, Ph.D., Reg. No. 45,105
Direct Phone: (512) 825-1145
Direct Fax No. (888) 456-7824

GARLICK HARRISON & MARKISON
ATTORNEYS AT LAW
P.O. BOX 160727
AUSTIN, TEXAS 78716-0727
TELEPHONE (512) 825-1145 / FACSIMILE (888) 456-7824 or (888) 711-8305